

What is Claimed is:

5 1. A culture device for the propagation or storage of microorganisms, said device comprising a self-supporting, waterproof substrate and a cover sheet, wherein a gelling agent is contained on said self-supporting substrate, and wherein said self-supporting substrate and said cover sheet comprise positioning structures.

10 2. The culture device of claim 1, wherein said positioning structures are holes, slits, slots, beveled edges, notches, or raised structures.

 3. The culture device of claim 1, said culture device further comprising a barcode label on a surface of said culture device.

15 4. The culture device of claim 1, wherein said cover sheet is transparent.

 5. The culture device of claim 1, wherein said self-supporting substrate further comprises a spacer.

20 6. The culture device of claim 1, wherein said self-supporting substrate further comprises a culture medium.

 7. The culture device of claim 1, wherein said cover sheet further comprises a gelling agent.

25 8. The culture device of claim 1, wherein said cover sheet further comprises a reinforcement layer.

 9. The culture device of claim 8, wherein said reinforcement layer is selected from the group consisting of a foam, a film, or a non-woven material.

30 10. The culture device of claim 1, wherein said device further comprises an indicator and a corresponding inducer.

11. The culture device of claim 1, wherein said device further comprises two chromogenic indicators providing different colors for differentiating microorganisms.

5 12. A culture device for the propagation or storage of microorganisms comprising first and second layers, said first and second layers comprising a gelling agent, said first and second layers further comprising positioning structures, and wherein said first and second layers are separable from each other.

10 13. A system for harvesting cells from a colony on a thin film culture device having positioning structures, said system comprising:

a) a scanner;
b) a processing unit; and
c) a picking apparatus, wherein said scanner provides an image file to said processing unit, wherein said processing unit provides the position of said colony relative to said positioning structures, and wherein said picking apparatus
15 harvests said cells from said colony based on said position.

20 14. The system of claim 13, wherein said picking apparatus has an orienting unit, said orienting unit having receiving structures adapted to receive corresponding positioning structures in said culture device.

15. The system of claim 14, wherein said orienting unit further comprises a compliant pad.

25 16. The system of claim 13, wherein said picking apparatus comprises a liquid handling tip.

17. A picking apparatus for harvesting cells from a colony on a thin film culture device having positioning structures, said picking apparatus comprising:

30 a) an orienting unit, wherein said orienting unit positions said colony relative to said positioning structures; and

b) a picking arm, wherein said picking arm is programmed with the position of said colony relative to said positioning structures and is adapted to contact cells of said colony based on said position.

5 18. The apparatus of claim 17, said orienting unit having receiving structures adapted to receive corresponding positioning structures in said culture device.

10 19. A method for harvesting cells from a colony on a culture device, said method comprising:

- a) providing a thin film culture device having positioning structures;
- b) obtaining an image of said culture device;
- c) processing said image to provide position of said colony relative to said positioning structures; and
- 15 d) contacting said cells with a picking apparatus based on said position of said colony to harvest said cells.

20 20. The method of claim 19, wherein said picking apparatus is moved in at least one direction from the contact point to harvest said cells.

21. The method of claim 19, wherein said picking apparatus is moved in at least two directions from the contact point to harvest said cells.

25 22. The method of claim 19, wherein processing said image comprises:

- a) identifying location of said positioning structures;
- b) identifying location of said colony; and
- c) calculating position of said colony relative to said positioning structures.

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23. The method of claim 19, wherein processing said image comprises selecting a specific colony relative to said positioning structures.

24. The method of claim 23, wherein said selecting a specific colony comprises selecting a colony having a predetermined size compared to a control colony.

5 25. The method of claim 23, wherein said selecting a specific colony comprises selecting a colony having a predetermined color.

26. The method of claim 19, wherein obtaining said image comprises scanning said culture device.

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27. A computer readable medium having instructions thereon causing a programmable processor to:

- a) display an image of a thin film culture device having positioning structures on a display device;
- 15 b) differentiate positioning structures from colonies on said culture device;
- c) identify location of said positioning structures;
- d) identify location of said colonies;
- e) calculate position of said colonies relative to said positioning
- 20 structures; and
- f) selecting specific colonies.

28. The computer readable medium of claim 36, wherein said medium is a storage medium for storing instructions.

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29. The computer readable medium of claim 36, wherein said medium is a transmission medium for transmitting said instructions.

30. A computer readable medium having an image stored therein, wherein said image contains image data representative of colonies on a thin film culture device having positioning structures.

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31. A computer readable medium having data stored therein, wherein said data are the coordinates of colonies on a culture device relative to positioning structures on said culture device.